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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,586	11/13/2003	Sanjay Bakshi	5038-332	1998
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32231 7590 01/24/2008  
MARGER JOHNSON & MCCOLLOM, P.C. - Intel  
210 SW MORRISON STREET, SUITE 400  
PORTLAND, OR 97204

EXAMINER
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BOKHARI, SYED M

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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01/24/2008 PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/713,586

**Applicant(s)**

BAKSHI ET AL.

**Examiner**

Syed Bokhari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 18-20, 24, 25 and 30-34 is/are rejected.
- 7) ☒ Claim(s) 16-17, 21-23 and 26-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/11/2005 and 11/13/2003</u> .                               | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant amendment filed on filed on October 15<sup>th</sup>, 2007 has been entered.

Claim 9 has been amended. Claims 1-34 are still pending in the application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6, 7, 13, 18-20, 25, 30-31 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shenoy et al. (US 2003/0223425 A1) in view of Yavatkar et al. (US 2003/0128668 A1) and further in view of Macera et al. (USP 5,490,252).

Shenoy et al. discloses a communication system for distributed implementation of control protocols in routers and switches with the following features: regarding claim 1, a system, comprising a control card, comprising (Fig.1, distributed processing architecture, see "network node includes a control module 106" recited in paragraph 0016 lines 3-4), a control processor to execute a control portion of an exterior gateway protocol (Fig.1, distributed processing architecture, see "control module 106 and 108 include a processor 122 to carry out the function" recited in paragraph 0018 lines 1-3), a routing table of exterior gateway routes and devices (Fig.1, distributed processing architecture, see "updating forwarding information, programming hardware tables" recited in paragraph 0017 lines 4-9), a line card, comprising (Fig.1, distributed processing architecture, see "three line cards 102A, 102B and 102C" recited in paragraph 0016 lines 5-6), a line processor to execute an offload portion of an exterior gateway protocol (Fig.1, distributed processing architecture, see "line processor 118 performs functions" recited in paragraph 0020 lines 10-12) and a communications port to allow termination of at least one communication link (Fig.1, distributed processing

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architecture, see "each line card includes at least one port to allow link termination" recited in paragraph 0020 lines 1-6); regarding claim 3, the control processor further comprising an Intel Architecture processor (Fig.1, distributed processing architecture, see "processor within each control module includes Intel1386 processor family" recited in paragraph 0018 lines 1-5); regarding claim 5, the line processor further comprising an Intel IXP processor (Fig.1, distributed processing architecture, see "processor within each control module includes Intel1386 processor family" recited in paragraph 0018 lines 1-5); regarding claim 13, transmitting any control-relevant data to a control card further comprising transmitting data related to valid updates from gateway peers (Fig. 2, router implementing a distributed control protocol, see "line card operating system communicates with control module" recited in paragraph 0027 lines 1-8); regarding claim 18, setup a control connection with a control card (Fig. 2, router implementing a distributed control protocol, see "TCP includes set up control" recited in paragraph 0028 lines 5-7); transmit data resource data to the control card (Fig.3 line card operating system, see "forwarding information to control module" recited in paragraph 0035 lines 1-7); receiving configuration information from the control card (Fig.1, distributed processing architecture, see "receiving traffic into the network node" recited in paragraph 0020 lines 1-5); establishing connections with exterior gateway peers (Fig.1, distributed processing architecture, see "each line card includes at least one port to allow link termination" recited in paragraph 0020 lines 1-6) and transmitting only valid Border Gateway Protocol data to the control card (Fig. 2, router implementing a distributed control protocol, see "line card operating system communicates with control

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module" recited in paragraph 0027 lines 1-8); regarding claim 20, performing Border Gateway Protocol functions (Fig.1, distributed processing architecture, see "control module implements border gateway protocol BGP" recited in paragraph 0017 lines 9-16) and further comprising parsing and validating incoming packets (Fig.1, distributed processing architecture, see "the processor performs packet parsing" recited in paragraph 0020 lines 10-12); regarding claim 25, a method of establishing a control portion of a distributed exterior gateway protocol (Fig.1, distributed processing architecture, see "control module 106 and 108 include a processor 122 to carry out the function" recited in paragraph 0018 lines 1-3), setting up control connections with line-cards (Fig. 2, router implementing a distributed control protocol, see "TCP includes set up control" recited in paragraph 0028 lines 5-7); configuring the line cards (Fig.1, distributed processing architecture, see "receiving traffic into the network node" recited in paragraph 0020 lines 1-5) and performing central Border Gateway Protocol functions (Fig.1, distributed processing architecture, see "control module implements border gateway protocol BGP" recited in paragraph 0017 lines 9-16); regarding claims 30, an article of machine-readable code containing instructions that, when executed, cause the machine to (Fig.1, distributed processing architecture, see "to execute a sequence of machine-readable instructions" recited in paragraph 0046 lines 1-10), receiving an incoming packet at a line-card (Fig.1, distributed processing architecture, see "line cards receive the traffic" recited in paragraph 0020 lines 1-4), Parsing the packet to extract protocol data (Fig.1, distributed processing architecture, see "packet parsing" recited in paragraph 0020 lines 10-12) and transmitting any control-relevant data to a control card

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(Fig.3 line card operating system, see "forwarding information to control module" recited in paragraph 0035 lines 1-7); regarding claim 31, the instructions causing the machine to receive an incoming packet at a line-card (Fig.1, distributed processing architecture, see "line cards receive the traffic" recited in paragraph 0020 lines 1-4) and further cause the machine to receive a packet through the Transmission Control Protocol (Fig.2, two communication channel used to communicate information, see "uses reliable transport layer protocol TCP" recited in paragraph 0028 lines 3-7).

Shenoy et al does not disclose the following features: regarding claim 1, backplane to allow the control card and the line card to communicate; regarding claim 2, the control processor further comprising a general-purpose processor; regarding claim 4, the line processor further comprising a network-enabled processor; regarding claim 6, the backplane further comprising a physical backplane connection and regarding claim 7, the backplane further comprising a network and regarding claim 18, a method of establishing an offload portion of a distributed exterior gateway protocol comprising, initializing a line card and registering an offload portion of a protocol to be executed by the line-card with a central registration point and performing Border Gateway Protocol functions at the line-card; regarding claim 25, initializing a control card, registering a control portion of a protocol to be executed by the control card with a central registration point and executing offload portions of the protocol.

Yavatkar et al. discloses a communication system for distributed implementation of control protocols in routers and switches with the following features: regarding

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claim 1, backplane to allow the control card and the line card to communicate (Fig. 2, router implementing a distributed control protocol, see “backplane 26 allows central control protocol information to be sent between control plane 22 and network” recited in paragraph 0019 lines 6-9); regarding claim 2, the control processor further comprising a general-purpose processor (Fig. 2, router implementing a distributed control protocol, see “control plane processor 23 which may be a general purpose processor” recited in paragraph 0016 lines 1-4); regarding claim 4, the line processor further comprising a network-enabled processor (Fig. 5, hardware used for distributed implementation, see “general purpose processor 65 performs the offload processing” recited in paragraph 0032 lines 5-13); regarding claim 6, the backplane further comprising a physical backplane connection (Fig. 2, router implementing a distributed control protocol, see “backplane 26 connect forwarding planes to each other and to control plane 22” recited in paragraph 0019 lines 1-2) and regarding claim 7, the backplane further comprising a network (Fig. 2, router implementing a distributed control protocol, see “backplane 26 allows a packet received from networks” recited in paragraph 0019 lines 2-6); regarding claim 18, a method of establishing an offload portion of a distributed exterior gateway protocol comprising (Fig.4, flow diagram of a process for implementing the distributed, see “perform the offload portion of the of the distributed control protocol” recited in paragraph 0032 lines 10-17), registering an offload portion of a protocol to be executed by the line-card with a central registration point (Fig.3, flow of a control protocol for distributed implementation of OSPF control protocol, see “offload portion of distributed control protocol is forwarded of the router 12 to control plane” recited in paragraph 0021



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lines 1-27); regarding claim 19, registering an offload portion further comprising registering with a distributed control plane architecture infrastructure module (Fig.3, flow of a control protocol for distributed implementation of OSPF control protocol, see “offload portion of distributed control protocol is forwarded of the router 12 to control plane” recited in paragraph 0021 lines 1-27); regarding claim 25, executing offload portions of the protocol (Fig.4, flow diagram of a process for implementing the distributed, see “perform the offload portion of the of the distributed control protocol” recited in paragraph 0032 lines 10-17) and registering a control portion of a protocol to be executed by the control card with a central registration point (Fig.3, flow of a control protocol for distributed implementation of OSPF control protocol, see “offload portion of distributed control protocol is forwarded of the router 12 to control plane” recited in paragraph 0021 lines 1-27).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Shenoy et al. by using the features, as taught by with Yavatkar et al., in order to provide backplane to allow the control card and the line card to communicate, the control processor comprising of a general-purpose processor, the line processor comprising of a network-enabled processor, establishing an offload portion of a distributed exterior gateway protocol and registering an offload portion of a protocol to be executed by the line-card with a central registration point. The motivation of using these functionalities is to enhance the functionality of the system in a cost effective manner.

Yavatkar et al. does not disclose the following features: regarding claim 18, initializing a line card and performing Border Gateway Protocol functions at the line-card.

Macera et al. discloses a communication system for exchanging packets of information between networks comprising network interface module with the following features: regarding claim 18, initializing a line card (Fig. 6, hot swap features of the system, see "each module is automatically self-configured when inserted into the backplane" recited in column 7 lines 26-44), and performing Border Gateway Protocol functions at the line-card (Fig. 3, network connected to bus of BES 43 via network interface module, see "BES supports the BGP on line interface module" recited in column 10 lines 16-31).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Shenoy et al. with Yavatkar et al. by using the features, as taught by Macera et al., in order to provide the method of initializing a line card and performing BGP on line card. The motivation of using this functionality is to enhance the functionality for hot swap in a cost effective manner.

6. Claims 8-12, 14, 24 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shenoy et al. (US 2003/0223425 A1) in view of Yavatkar et al. (US 2003/0128668 A1) as applied to claim 1, 8, 18 and 30 above, and further in view of Moberg et al. (USP 6,697,872 B1).

Shenoy et al. and Yavatkar et al. disclose the claimed limitations as discussed in paragraph 5 above, Shenoy et al. also discloses the following features: regarding claim 8, a method of processing an exterior gateway protocol packet (Fig.1, distributed processing architecture, see "protocols are implemented by control module" recited in paragraph 0017 lines 9-16), receiving an incoming packet at a line-card (Fig.1, distributed processing architecture, see "line cards receive the traffic" recited in paragraph 0020 lines 1-4), Parsing the packet to extract protocol data (Fig.1, distributed processing architecture, see "packet parsing" recited in paragraph 0020 lines 10-12); transmitting any control-relevant data to a control card (Fig.3 line card operating system, see "forwarding information to control module" recited in paragraph 0035 lines 1-7) and generating message traffic for peer gateways (Fig.1, distributed processing architecture, see "forwarding information is generated" recited in paragraph 0022 lines 1-7) ; regarding claim 9, receiving the incoming packet at the line-card further comprising receiving a packet through the Transmission Control Protocol (Fig.2, two communication channel used to communicate information, see "uses reliable transport layer protocol TCP" recited in paragraph 0028 lines 3-7); regarding claim 14, parsing the packet to extract protocol data (Fig.1, distributed processing architecture, see "the processor performs packet parsing" recited in paragraph 0020 lines 10-12) and regarding claim 24, performing Border Gateway Protocol functions (Fig.1, distributed processing architecture, see "control module implements border gateway protocol BGP" recited in paragraph 0017 lines 9-16).

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Shenoy et al. and Yavatkar et al. do not disclose the following features: regarding claim 8, determining if the packet is valid; regarding claim 10, determining if the packet is valid further comprising determining if the packet is a malformed packet; regarding claim 11, if the packet is valid further comprising applying a packet filter to the packets; regarding claim 12, determining if the packet is valid further comprising applying an address filter to the packets; regarding claim 14, further comprising decrypting encrypted packets; regarding claim 24, further comprising encrypting and decrypting packets as necessary; regarding claim 32, the instructions causing the machine to determine if the packet is valid further causes the machine to determine if the packet is a mal-formed packet; regarding claim 33, the instructions causing the machine to determine if the packet is valid further causes the machine to apply a packet filter to the packet and regarding claim 34, the instructions causing the machine to determine if the packet is valid further causes the machine to apply an address filter to the packet.

Moberg et al. discloses a communication system for distributed packet processing using encapsulation and decapsulation chains with the following features: regarding claim 8, determining if the packet is valid (Fig.1, distributed processing architecture, see "examine the entire packet to verify its validity" recited in column 4 lines 55-58); regarding claim 10, determining if the packet is valid further comprising applying a packet filter to the packets (Fig.1, distributed processing architecture, see "examine the entire packet to verify its validity" recited in column 4 lines 55-62); regarding claim 11, if the packet is valid further comprising applying a packet filter to the packets (Fig.1, distributed processing architecture, see "after validation the data packet

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processed" recited in column 4 lines 47-49); regarding claim 12, determining if the packet is valid further comprising applying an address filter to the packets (Fig.1, distributed processing architecture, see "examine the network address of the received packet" recited in column 4 lines 49-51); regarding claim 14, further comprising decrypting encrypted packets (Fig. 4, chain walker used to process packet, see "decryption element 60" recited in column 7 lines 10-16); regarding claim 24, further comprising encrypting and decrypting packets as necessary (Fig. 4, chain walker used to process packet, see "decryption element 60" recited in column 7 lines 10-16 and lines 25-28); regarding claim 32, the instructions causing the machine to determine if the packet is valid further causes the machine to determine if the packet is a mal-formed packet (Fig.1, distributed processing architecture, see "examine the entire packet to verify its validity" recited in column 4 lines 55-62); regarding claim 33, the instructions causing the machine to determine if the packet is valid further causes the machine to apply a packet filter to the packet (Fig.1, distributed processing architecture, see "after validation the data packet processed" recited in column 4 lines 47-49); regarding claim 34, the instructions causing the machine to determine if the packet is valid further causes the machine to apply an address filter to the packet (Fig.1, distributed processing architecture, see "examine the network address of the received packet" recited in column 4 lines 49-51);

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Shenoy et al. with Yavatkar et al. by using the features, as taught by Moberg et al., in order to provide to determining if the packet is

valid, determining if the packet is a malformed packet, applying a packet filter to the packets, conducting decrypting encrypted packets and instructions causing the machine to determine if the packet is valid or a mal-formed packet. The motivation of using this functionality is to enhance the functionality of the system in a cost effective manner.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shenoy et al. (US 2003/0223425 A1) in view of Moberg et al. (USP 6,697,872 B1) as applied to claim 8 above, and further in view of Harvey et al. (US 2003/0140167 A1).

Shenoy et al. and Moberg et al. disclose the claimed limitations as discussed in paragraph 6, above. Shenoy et al. and Moberg et al. do not disclose the following features: regarding claim 15, generating message traffic for peer gateways and further comprising generating responses required by the incoming packets.

Harvey et al. discloses a method and apparatus for synchronizing redundant communication task with the following features: regarding claim 15, generating message traffic for peer gateways (Fig. 1, flow chart depicting a method for synchronizing TCP tasks, see "an update message should be generated" recited in paragraph 0032 lines 1-11) and further comprising generating responses required by the incoming packets (Fig. 1, flow chart depicting a method for synchronizing TCP tasks, see "issuing TCP packet acknowledgement message step 126" recited in paragraph 0030 lines 1-10).

It would have been obvious to one of the ordinary skill in the art at the time of the

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invention to modify the system of Shenoy et al. with Moberg et al. by using the features, as taught by Harvey et al., in order to provide of generating message traffic for peer gateways and further comprising generating responses required by the incoming packets. The motivation of using this functionality is to enhance the functionality of the system in a cost effective manner.

***Allowable Subject Matter***

8. Claims 16-17, 21-23 and 26-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

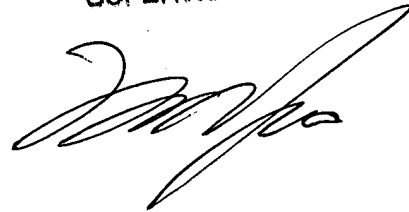
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed Bokhari whose telephone number is (571) 270-3115. The examiner can normally be reached on Monday through Friday 8:00-17:00 Hrs..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KWANG BIN YAO  
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Kwang Bin Yao', is written over the printed name and title.